

PATENTS ABSTRACTS OF JAPAN

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(54) RECEPTION/EMISSION COMPOUND ELEMENT

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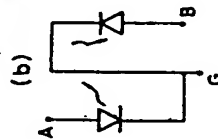
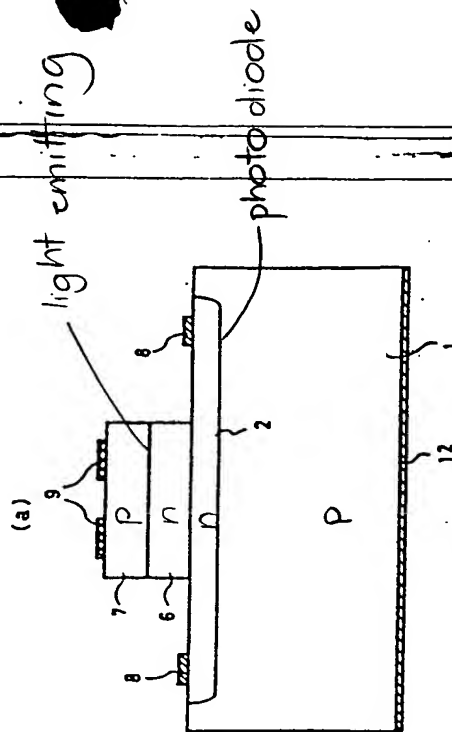
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PURPOSE: To enable a light-emitting element and a light-receiving element to be compound in a simple structure by setting a light-emitting diode or a main terminal of one of a laser diode and a photo diode to a common potential without using a wiring.

CONSTITUTION: A p-type conductive type silicon is used as a first semiconductor substrate 1 and an n-type impurities layer where phosphor or arsenic is doped is formed as a second conductive type impurities layer 2. A double-layer gallium arsenide layer is formed on this n-type impurities layer 2, an impurities layer 6 at a side which contacts an Si substrate is formed as an n-type impurities layer by doping silicon or tellurium, and then beryllium or zinc is doped to an impurities layer 7 on it, thus forming a p-type impurities layer. A pn junction between the p-type Si substrate 1 and the n-type impurities layer 2 is formed as a photo diode and is used as a light-receiving element. A light-emitting diode is formed by the n-type impurities layer 6 and the p-type impurities layer 7 of GaAs and is used as a light-emitting element and an electrode which is formed on a from a first main surface of the Si substrate 1 to the n-type impurities layer 2 is used as a common electrode 8.



LEGENDE zu den Bibliographiedaten

(54) Titel der Patentanmeldung

(11) Nummer der JP-A2 Veröffentlichung

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